



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/509,418      07/11/00      KOROPATNICK

D      PM 266291

EXAMINER

000909  
PILLSBURY WINTHROP LLP  
1600 TYSONS BOULEVARD  
MCLEAN VA 22102

HM12/0920

FPPLT

ART UNIT

PAPER NUMBER

1635

DATE MAILED:

09/20/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/509,418

Applicant(s)

KOROPATNICK ET AL.

Examiner

Janet L. Epps

Art Unit

1635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 July 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) g. 6) ☐ Other: \_\_\_\_\_

Art Unit: 1635

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Arguments***

2. Claims 1-6 remain rejected under 35 USC 102(b) as being anticipated by Ju (1996) for the reasons of record set forth in the Official Action mailed 1-31-01.

Applicant's arguments filed 7-2-01 have been fully considered but they are not persuasive. Applicants traverse the instant rejection on the grounds that the antisense oligonucleotides of Ju (1996) target the 5' end of thymidylate synthase mRNA, and that Ju fails to teach the claimed antisense oligodeoxynucleotides targeted to the sequences of the 3' end of the thymidylate synthase mRNA. However, contrary to Applicants assertions it is first noted that the instant claims do not recite oligodeoxynucleotides, the instant claims recite antisense oligonucleotides that read on both antisense RNA and DNA. Additionally, it is noted that Ju discloses an antisense vector comprising the full length antisense sequence of the thymidylate synthase gene. Therefore, the antisense vector of Ju (1996) comprises sequence that targets both the 5' and 3' end of the thymidylate nucleic acid sequences. Since Applicant's claims do not indicate the specific regions of the 3' end to which the claimed antisense oligonucleotide is targeted to wherein the antisense oligonucleotide selectively enhances or inhibits thymidylate synthase production, the antisense vector of Ju which targets the 3' end of the thymidylate synthase nucleic acid molecule anticipates Applicant's claimed invention.

Art Unit: 1635

3. Claims 1-2, 5, 8 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed had possession of the claimed invention; additionally Claims 8-9 remain rejected and claims 11-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, for the reasons of record set forth in the Official Action mailed 1-31-01.

Applicant's arguments filed 7-2-01 have been fully considered but they are not persuasive. Applicants traverse the rejection of claims 1-2, 5 and 8 for lack of an adequate written description on the grounds that the instant claims are adequately supported by the written description set forth in the specification as filed, since the specification clearly discloses oligonucleotides that target specific loci in thymidylate synthase. Additionally, Applicants argue that a skilled artisan using the human thymidylate synthase sequence would be able to identify corresponding loci in other mammalian genomes. However, the instant claims do not recite the specific loci that Applicants are referring to that are described in the specification as filed. Additionally, since the claims embrace a genus of nucleic acid sequences that read on antisense oligonucleotides targeting a genus of nucleic acid molecules encoding TS comprising any polymorphic variant of TS, and homologues of TS isolated from any organism, the

Art Unit: 1635

disclosure of the human thymidylate synthase is not sufficient to describe the common attributes or characteristics that identify members of the claimed genus.

Applicants traverse the rejection of claims 8-10 for lack of enablement on the grounds that the "antisense oligonucleotide embraced by the specification are both suitable and useful in regulating thymidylate synthase production in mammalian cells. The antisense oligonucleotides of the invention may be administered by injection." However, contrary to Applicant's arguments, the teachings of the specification are purely prophetic, Applicants do not provide sufficient guidance to one of skill in the art to practice the claimed *in vivo* method based upon *in vitro* examples and prophetic teaching regarding practicing the claimed invention *in vivo*. Due to the significant level of unpredictability in the antisense art as described in the previous Official Action, the lack of *in vivo* examples wherein applicants have produced a therapeutic effect in a mammal, and the lack of specific guidance in this regard the specification as filed does not describe the use of TS antisense oligonucleotides in a method of nucleic acid therapy, in a sufficient manner so as to enable one of ordinary skill in the art to practice the present invention without undue experimentation.

Art Unit: 1635

***Conclusi n***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1635

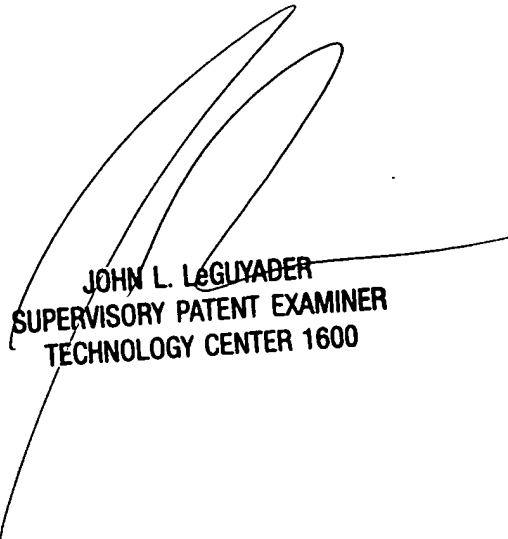
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L Epps whose telephone number is 703-308-8883. The examiner can normally be reached on Mondays through Friday, 9:00AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John LeGuyader can be reached on (703)-308-0447. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-746-5143 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Janet L Epps  
Examiner  
Art Unit 1635

*JLE*  
September 13, 2001

  
JOHN L. LEGUYADER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600